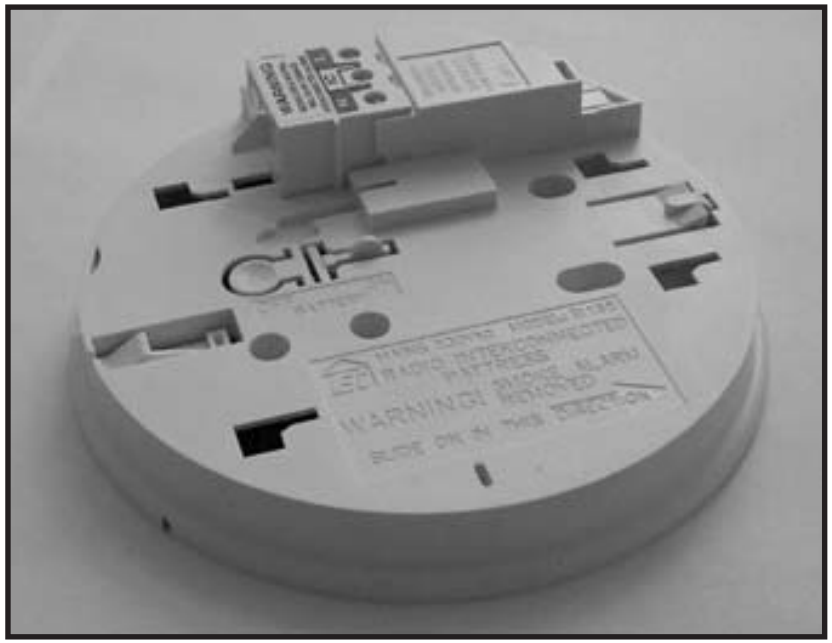
Ei Professional®

RadioLINK

BASE

for use with easi-fit® **Smoke & Heat Alarms**



User Manual

Contains vital information on the products operation and installation. Read and retain carefully. If you are just installing this product **the manual MUST be given to the householder.**

Model: Ei168

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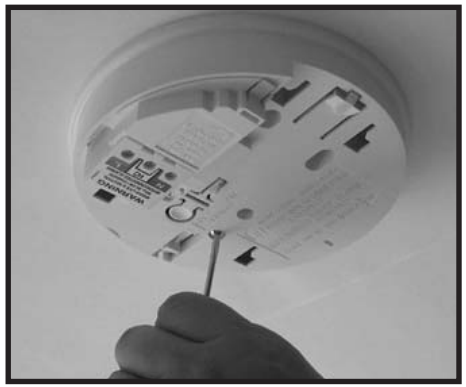
1. QUICK INSTALLATION GUIDE

For use only with Ei Electronics Easi Fit Mains Powered Smoke Alarms Ei141, 144, 146, 161, 161R, 164, 166 & 166R. The Ei168 ***RadioLINK*** Base **must be installed by a qualified electrician**.



1.1) **Install each *RadioLINK* Base** in the centre of the ceiling at least 0.30m from light fittings (as per the smoke/heat alarm instructions) and connect to nearest mains circuit (see page 3).

1.2) **Slide alarm** on to the Ei168 ***RadioLINK*** Base. This will automatically activate the rechargeable back-up cells. Repeat this procedure for all alarms in the system (see page 5).

1.3) **To House Code**, insert a small screwdriver into the house code switch slots of each unit in succession. This must be completed within 15 minutes to activate the house code mode and ensure zoned interconnection (see page 6). **It is essential that the *RadioLINK* Bases are house coded.**

1.4) **Button test** each alarm to ensure that they are all communicating.

This guide is for quick referencing only. You must read the user manual thoroughly before installation and use.

2. INTRODUCTION

The Ei168 ***RadioLINK*** Base transmits a Radio Frequency (RF) alarm signal when the unit attached to it senses fire. When it receives an RF alarm signal from another Ei168 Base, the attached smoke or heat alarm will sound. It therefore eliminates the need to run long interconnect wires between all the smoke alarms on different floors and in different rooms.

It is designed for use with the Easi Fit range of Mains Powered Smoke/Heat Alarms. The ***RadioLINK*** Base itself, is also mains powered and has rechargeable lithium cells for back-up in the event of mains failure. The ***RadioLINK*** Base will normally be wired to the nearest mains circuit in the ceiling (usually the lighting circuit, provided unswitched live is available). The Smoke/Heat Alarm is then slid on to the ***RadioLINK*** Base rather than to its normal mounting plate. As many as 12 units can be interconnected in this way.

It is <u>essential</u> to house code the *RadioLINK* Bases to ensure they will not accidently signal to nearby systems. This is easily done as explained in section 3 below.

(The units will all communicate with each other (provided they are within range) as installed i.e. without any house coding).

With an Ei410 Remote Control (optional) the system is much more versatile and user-friendly. It allows you to remotely test, silence nuisance alarm (Ei161R & Ei166R only) and even quickly locate which unit is sensing fire.

3. INSTALLATION

WARNING: Mains operated products should be installed by a qualified electrician per the Regulations for Electrical Installations contained in the IEE Wiring Regulations — British Standard 7671. Failure to install this unit correctly may expose the user to shock or fire hazards. This unit is not waterproof and must not be exposed to dripping or splashing.

Up to twelve Ei168 ***RadioLINK*** Bases can be interconnected using the RF radio link.

1. Select a location complying with the advice in the Smoke/Heat Alarm instruction leaflet.

2. Disconnect the AC mains supply from the circuit that is going to be used.

3. Carefully align the ***RadioLINK*** Base and screw into place as shown in figure 1. (It is advisable at this time to use only one screw (as shown) as it allows the base to be rotated later if required. If you use only one screw, ensure the base is secure on the ceiling before proceeding further with the installation. Remember to complete the installation by securing with the second screw after the system has been checked).

4. Lift off the wiring cover as shown in figure 2.

Figure 1

Figure 2

5. If the mains wires are recessed (coming through a hole in the ceiling), bring the wires to the terminal block through the rear hole in the mounting plate as shown in figure 3.

Ensure the rear gasket seals around the edge of the hole in the ceiling. This is to prevent air draughts affecting the smoke or heat entering the alarm. If the orifice is too large it should be sealed with silicone rubber or equivalent (when the rest of the installation is complete).

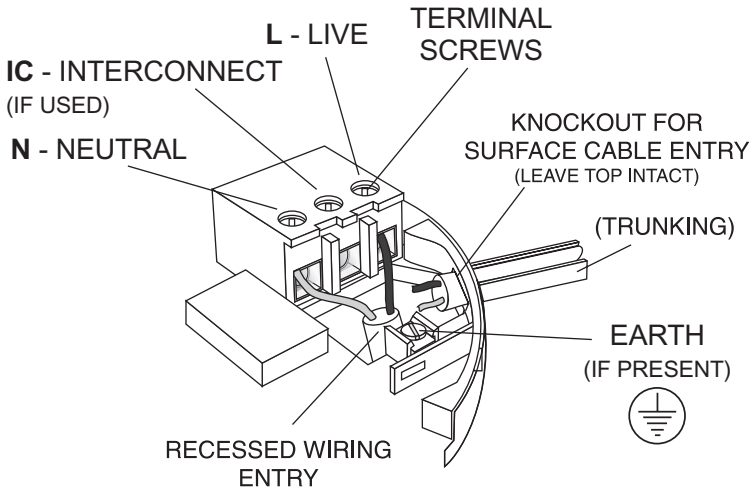


Figure 3

If the mains wires are being brought along the surface:

(a) position the mounting plate so the cable trunking is as shown in figure 3.

(b) Carefully cut and trim the knockouts in the ***RadioLINK*** Base side walls to blend with the contours of the trunking.

Important: Only cut the thinned down knockout section and leave the top intact as shown. There is only one position suitable for the surface wiring to enter the alarm.

6. The house wiring must then be connected to the terminal block on the Ei168 ***RadioLINK*** Base as follows (see figure 3):

L: Live - connect to the house wires coloured brown, red or marked L.

N: Neutral - connect to the house wires coloured blue, black or marked N.

IC: (Hardwire Interconnect- normally not used except to hardwire interconnect to mains smoke alarms which don't have an Ei168 ***RadioLINK*** Base)

The alarm does not need to be earthed. However the earth terminal is provided for the convenience of the installers so that any earth wire or cable coloured green or green & yellow, can be safety terminated.

Note: House wiring should not be bunched up in the area of the alarms but quickly directed away. This will minimize their effect on the radio aerial.

7. Replace the wiring cover.

8. Remove the required Smoke/ Heat Alarm from the box (discard the mounting plate supplied). Carefully line up the smoke/heat alarm on the Ei168 ***RadioLINK*** Base and slide it on (see fig 4).

9. Connect the mains power to the alarm circuit. Check the green light is on. If the amber light flashes every 10 seconds, remove the alarm (see figure 5 on how to remove alarm) and manually depress the rechargeable cell "on" switch as shown in figure 7 and replace the alarm. If there is still a problem the cells may be

Figure 4

(PUSH COVER BACK)

WARNING: DISCONNECT MAINS BEFORE REMOVING ALARM

Figure 5

depleted so leave the unit on mains power for 2 hours to charge and test again.

Similarly, install all the other Smoke/Heat Alarms with their Ei168 ***RadioLINK*** Bases.

10. Press and hold the House Code switch on the side of any one of the ***RadioLINK*** Bases as shown in figure 6 with a small screwdriver until the amber light turns on. Release the switch and the light will flash quickly a few times. The amber light will then flash every 5 seconds. Repeat this action on all other ***RadioLINK*** Bases in the property within 15 minutes (before the timeout period expires).

Figure 6

(If any other RadioLINK accessories are to be used they must also be put into the house code mode at this time — see their instructions leaflets for details).

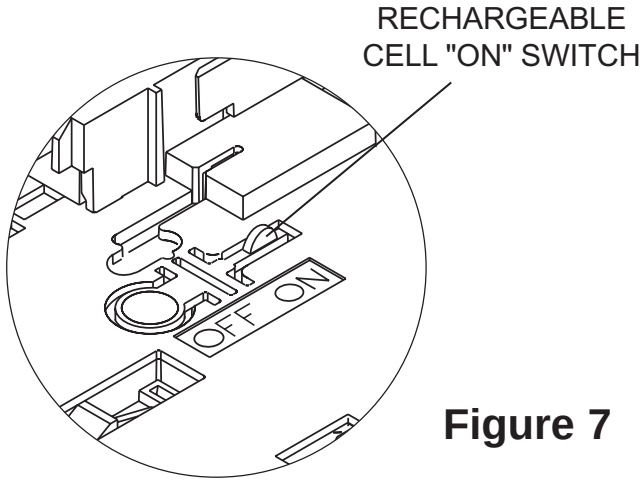


Figure 7

11. Check that all ***RadioLINK*** Bases have communicated with each other by counting the number of times the amber light flashes on each base in turn. For example, 3 units in the system should have 3 flashes every 5 seconds, 4 units should have 4 flashes and so on. (If there is a problem see Section 5)

12. Check the radio link communication by pressing the test/hush button for up to

20 seconds on each unit. The horn will sound and the amber light on the ***RadioLINK*** Base sidewall will come on continuously for about 3.5 seconds. All other installed units should now sound. Release the test button. The local alarm will cease and you should then be able to hear the other alarms sounding in the distance. (If any of the alarms do not sound see section 5).

13. The units will automatically exit the house code mode after 15 minutes. **We recommend that you manually exit the house code mode** by re-pressing and holding the house code switch on until the amber light turns on. This reduces the risk of accidently house coding your alarms with nearby systems.

Finally attach the label provided to the distribution board to identify the alarm circuits.

(Note: To clear house codes see section 10 - Technical Specification)

4. ACTIVATING THE REPEATER FUNCTION

In normal installations (single storey and two-storey houses), the signal range should be sufficient to activate the alarms. However some Ei168 ***RadioLINK*** Bases may not receive the radio link signals and then it will be necessary to set up a unit as a REPEATER Base. The function of the Repeater Base is to receive and re-broadcast the signals, so effectively boosting the signal range throughout the installation. For the highest RF signal reliability we recommend that a Repeater Base is used for systems with 3 or more units.

To setup a Repeater Base:

(i) Choose a ***RadioLINK*** Base that is centrally located within the house.

(ii) Press and hold the test button until the alarm sounds and the amber light comes on, then immediately (while light remains on) press and hold the House Code switch on the side of the ***RadioLINK*** Base with a small screwdriver until the amber light flashes slowly. Release switch. The amber light will flash slowly to indicate that the ***RadioLINK*** base is in Repeater Mode.

Although, any Ei168 ***RadioLINK*** Base can be converted into a Repeater Base. **Only one base should be designated as a repeater unit in any house installation.** More then one repeater base in any single system may cause signal interference and could result in units not communicating with each other.

(Note: To deactivate the Repeater function see section 10 - Technical Specification)

5. TROUBLESHOOTING RF LINK

If, when checking the radio link interconnection, some of the alarms do not respond to the button test, then:

(i) Ensure you have held the test button down until the amber light has come on continuously for 3.5 seconds (this could take up to 20 seconds).

(ii) Convert one of the ***RadioLINK*** Bases that is centrally located within the house in to a Repeater . (see section 4)

(iii) Extend the flexible antenna from the base housing. To do this the antenna should first be removed from its groove in the base of the unit (see figure 8). Remove the breakaway section in the outer rim and the push the antenna in to this groove. From maximum signal strength the antenna should be pushed flat against the ceiling in a parallel orientation to the other units (see figure 9).

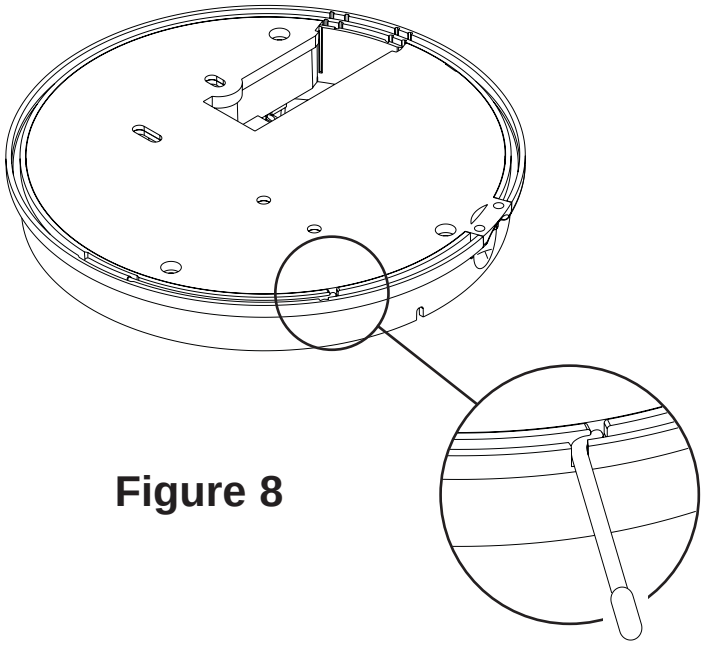


Figure 8

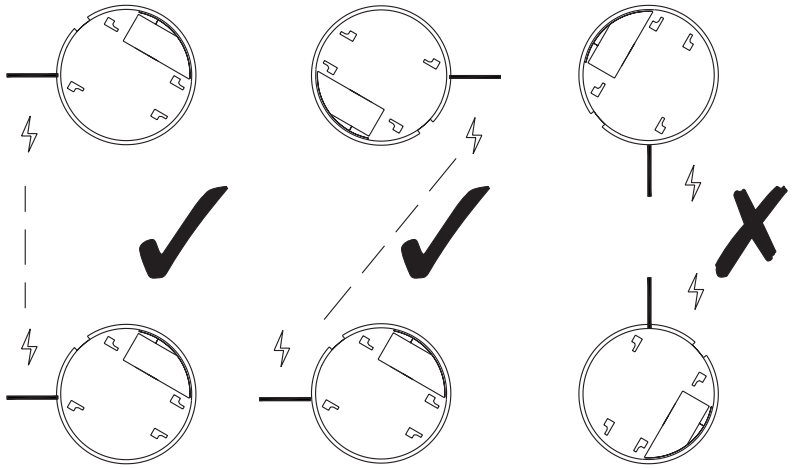


Figure 9

(iv) Re-locate/rotate the units. There are a number of reasons why the radio link signals may not reach all the smoke alarms in your system (see section 6 on Limitations of Radio Frequency Signals). Try rotating the units or re-locating the units (e.g. move them away from metal surfaces or wiring) as this can significantly improve signal reception.

Rotating and/or relocating the units may move them out of the range of existing units even though they may have already been house coded correctly in the system. It is important therefore to check that all detectors are communicating in their final installed positions. If units are rotated and/or resited, we recommend that all units are returned to the factory settings (press and hold the house code switch on for about 6 seconds until the amber light comes on and then flashes slowly). Then house code all units again in their final positions as per section 3 Installation paragraphs 10 - 13. The radio link inter-connection should then be checked again.

6. LIMITATIONS OF RADIO COMMUNICATIONS

Ei Electronics radio communication systems are very reliable and are tested to high standards. However, due to their low transmitting power and limited range (required by regulatory bodies) there are some limitations to be considered:

(i) Radio equipment, such as the Ei168 ***RadioLINK*** Base, should be tested regularly at least weekly. This is to determine whether there are sources of interference preventing communication. The radio paths may be disrupted by moving furniture or renovations, and so regular testing protects against these and other faults.

(ii) Receivers may be blocked by radio signals occurring on or near their operating frequencies, regardless of the house coding.

The Ei168 ***RadioLINK*** Base has been tested to EN 300 220-1 V1.3.1 (200-09) in accordance with the requirements of EN 300 220V1.1.1 (2000-09). These tests are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio and television reception.

However, there is no guarantee that interference will not occur in a particular installation. If this device does cause such interference, which can be verified by turning the device on and off (remove both the mains and turn off backup power supplies), the user is encouraged to eliminate the interference by one or more of the following measures:

(i) Re-orientate or re-locate the unit

(ii) Increase the distance between the Ei 168 and the device being affected

(iii) Connect the device being affected to a mains outlet on a circuit different from the one that supplies the Ei168 transceiver

(iv) Consult the supplier or an experienced radio/television technician.

7. CHECKING & MAINTAINING YOUR SMOKE ALARM SYSTEM

7.1 Inspection & Testing Procedure

We recommend that a weekly check is made of your Alarm System as below. We particularly stress the need for this check after re-occupation following a holiday etc.

(i) Check that the green mains indicator light is on. (If it is off, check circuit breakers, fuses and wiring etc.) Check the red light on the cover flashes every 40 seconds.

(ii) Press the test/hush button for up to 20 seconds on each unit. The horn will sound and the amber light on the ***RadioLINK*** Base sidewall will come on continuously for about 3.5 seconds. This will ensure the sensor chamber, electronics and sounder are working. A red light on the cover will flash while horn is sounding. All other installed units should now sound. Release the test button. The local alarm will cease and you should then be able to hear the other alarms sounding in the distance. (If any of the alarms do not sound see section 5).

Pressing the test button simulates the effect of smoke or heat during a real fire and is the best way to ensure the Alarm is operating correctly.

WARNING: DO NOT TEST WITH FLAME.

(This can set fire to the Alarm and damage the house).

We do not recommend testing with smoke or heat as the results can be misleading unless special apparatus is used.

Check for any sign of contamination such as cobwebs or dust and if necessary clean the alarm as described in the smoke alarm instruction leaflet.

7.2 Checking *RadioLINK* Base Battery Back-Up

It is important to check that the rechargeable back-up cells in the Ei168 ***RadioLINK*** Base are switched on, charged, and capable of powering the system.
We therefore recommend that the functioning of the mains rechargeable cell back-up is checked directly **after installation** and then **at least yearly** as follows:

(i) Check that the amber light on the side of the ***RadioLINK*** Base is not flashing once every 10 seconds. If it is, it indicates either that the rechargeable cells in the ***RadioLINK*** Base are not connected or depleted. Remove the Alarm and press the rechargeable cell on switch (see figures 5 & 7). Re-install the Smoke Alarm and re-connect the mains. If the amber light is still flashing every 10 seconds leave it for 2 hours to charge and then re-check.

(ii) Switch off or disconnect mains. The green light on the smoke/heat alarm will turn off. Check the radio link as described in section 7.1 above. Check the battery backup as per (i) above.

(iii) If everything is satisfactory, re-connect the mains.

If the interconnect fails to operate or the amber light continues to flash every 10 seconds (even after (i) above) then it is defective and must be replaced (see getting your ***RadioLINK*** Base serviced as per section 8 below).

Further instructions are given in the instruction leaflet supplied with the Smoke / Heat Alarm regarding their maintenance and checking of their back-up supplies.

7.3 End of Life

After 10 years (see date on the side of the ***RadioLINK*** Base) the Ei 168 ***RadioLINK*** Base and the attached Smoke or Heat Alarm must be replaced.

8. GETTING YOUR *RadioLINK* BASE SERVICED

If your RadioLINK Base fails to work after you have carefully read all the instructions, checked that the unit has been installed correctly, and is receiving AC power (green light on in smoke / heat alarms) contact Customer Assistance at the nearest address given at the end of this leaflet. If it needs to be returned for repair or replacement, press the "off" switch (see figure 7) to disconnect the rechargeable cells and put both the alarm and the Ei168 ***RadioLINK*** Base in a padded box and send it to "Customer Assistance and Information" at the nearest address given on the unit or in this leaflet. Do not snap the smoke/heat alarm on to the ***RadioLINK*** Base as this connects the battery and the unit may beep or alarm in the post. State the nature of the fault, where the ***RadioLINK*** Base and alarm were purchased and the date of purchase.

9. FIVE YEAR GUARANTEE

Ei Electronics, guarantees this ***RadioLINK*** Base for five years from date of purchase against any defects that are due to faulty materials or workmanship. This

guarantee only applies to normal conditions of use and service, and does not include damage resulting from accident, neglect, mis-use, unauthorized dismantling, or contamination howsoever caused. This guarantee excludes incidental and consequential damage. This guarantee does not cover costs associated with the removal and/or installation of units. If this ***RadioLINK*** Base should become defective within the guarantee period, it must be returned to Ei Electronics, with proof of purchase, carefully packaged, and with the problem clearly stated. (see "Getting Your ***RadioLINK*** Base Serviced"). We shall at our discretion repair or replace the faulty unit.

Do not interfere with the ***RadioLINK*** Base or attempt to tamper with it. This will invalidate the guarantee, but more importantly may expose the user to shock or fire hazards. This guarantee is in addition to your statutory rights as a consumer.

10. TECHNICAL SPECIFICATION

Mains: 230 VAC

Battery Back-Up: Rechargeable Built-in Lithium Cells.

Approvals: Complies with EMC, Electrical Safety and Radio Regulations — including requirements of the RTTE Directive Compatibility 1999/5/EC (RF Performance to EN300220-3, EMC to EMC 301489-3) - independently tested

Humidity Range: 15% to 95% RH (non-condensing).

Radio Frequency: 868.499 MHz (Regulated 1% duty cycle band).

RF Power: +5dBm.

Range: 150 meters (minimum) in free space.

RF RECEPTION

Alarm Signal Reception: Turns on horn without red light flashing for 60 seconds unless it receives an alarm cancel signal within that period.

Duration of House Code Mode: 15 minutes

RF VISUAL INDICATOR (Amber)

On Transmission: Amber LED lights continuously for 1.5 to 3.5 seconds while messages are being transmitted. The amber light also flashes after receipt of an alarm cancel signal.

Low Battery Indication: Amber light flashes every 10 second.

Size of System: A maximum number of 12 Ei168 units can communicate together on one system (however the range is likely to be the limiting factor in many cases)

Communication: All units will communicate together as shipped. After a unit has been house coded it will only communicate with other units house coded at the same time. House coding is essential to prevent false alarms from neighbouring systems.

Entering House Code Mode: Pressing and holding the House Code switch until the amber light comes on puts the ***RadioLINK*** Base into house code mode.

House Code Mode: The ***RadioLINK*** Base transmits and receives specific codes. The amber light flashes once every 5 seconds for each unit s code it memorises (including itself).

Clearing House Codes: The house codes memorised can be deleted (i.e. the ***RadioLINK*** Bases can be uncoded) by pressing and holding the House Code switch on for about 6 seconds. The amber light will come on and then flash slowly to indicate the smoke alarm has been returned to the default factory settings. (this also clears the Repeater function).

Repeater Function: The ***RadioLINK*** Base receives and then re-broadcasts the varoius RF signals, so effectively boosting the signal range.

Activating the Repeater Function: Press and hold the test button until the alarm sounds and the amber light comes on, then immediately (while the light is on) press and hold the House Code switch until the amber light flashes slowly. The amber light will flash 15 times to indicate that the ***RadioLINK*** Base is now a Repeater Base.

De-activating the Repeater Function: Press and hold the test button until the alarm sounds and the amber light comes on, then immediately press and hold the House Code switch until the amber light flashes slowly. The amber light will flash only 3 times to indicate that the ***RadioLINK*** Base is now no longer a Repeater Base.

11. *RadioLINK* ACCESSORIES

Ei410 - RadioLINK REMOTE CONTROLLER

The Remote Control Ei410 allows you to **test, hush** or **locate** RF linked Smoke/Heat Alarms.

Ei411 - RadioLINK REMOTE TEST & LOCATE SWITCH

This wall mounted switch allows you to **test** or **locate** RF linked Smoke/Heat Alarms.

Ei428 - RadioLINK RELAY MODULE

This module is a device that switches a relay upon receipt of an alarm signal from a suitable Ei smoke/heat alarm.

Ei407 - RadioLINK MANUAL CALL POINT

This wall mounted call point when activated will alarm all RF linked Smoke/Heat Alarms.

Note: Comprehensive operation of the Ei410 or Ei411 accessories may require either an Ei161R or an Ei166R Smoke Alarm to be connected.

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P/N B15051 Rev 1